

Some rare species of the genera *Amphidelus* and *Aporcelaimellus* (Nematoda: Dorylaimida) from Sas Hill, Budapest, Hungary

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Abstract. Four rare nematode species from Sas Hill in Budapest are described and illustrated. They are *Amphidelus lagrecai* Vinciguerra & De Francisci, 1973, *Amphidelus coluber* Andrassy, 1973, *Aporcelaimellus alius* Andrassy, 2002 and *Aporcelaimellus amylovorus* (Thorne & Swanger, 1936) Heyns, 1965. Of them, *A. lagrecai* is new to the fauna of Hungary.

One of the most widely studied natural area of Budapest is Sas Hill (Sas-hegy in Hungarian). With its 266 meter height above sea level and about 30 hectare extent, it is the most significant natural value in the centre of the capital. It is a dolomite hill of late Triassic origin, rising sharply from the Kelenföld Plain, on the right side of river Danube. Due to its unique flora and fauna, which contain Mediterranean elements, Sas Hill has been protected since 1958, and recently is part of the Duna–Ipoly National Park in northern Hungary.

The special biota of Sas Hill has been studied by several authors. Of the invertebrate fauna, the spiders were studied by Balogh (1935) and the enchytraeids by Boros (2007). However, the best general picture of the flora and fauna was drawn by Loksa (1977). As for nematodes of the region, rather few data has been published so far.

MATERIALS AND METHODS

Nematodes were isolated using Bearmann's funnel method (Andrassy & Farkas, 1988). They were fixed in FAA and then transferred in anhydrous glycerine by a slow method. The nematodes were examined using a light microscope.

Drawings were made with the aid of a *camera lucida*. Measurements were taken by an ocular micrometer, curved structures measured along medial line. The permanent glass slides are preserved in the collection of the author, later they will be deposited at the Zoological Department of Hungarian Natural History Museum, Budapest.

DESCRIPTIONS

Amphidelus lagrecai Vinciguerra & De Francisci, 1973

(Fig. 1 A–E)

Females: (n = 2) L = 1.2–1.4 mm; a = 48–52; b = 4.2–4.6; c = 14–15; c' = 7–8; V = 60–63 %.

Male: unknown.

General characters. Body slender, transparent, C-shaped after fixation, tapering at the both extremities, more markedly at the posterior one. Cuticle smooth, 2 µm thick. Anterior end rounded, lips small, flat, 7–8 µm wide. Labial sensillae large. Stoma very small and unarmed. Amphids less than two labial widths from lips. Amphidial aperture transverse, 2.5 µm wide, slit-like, amphi-

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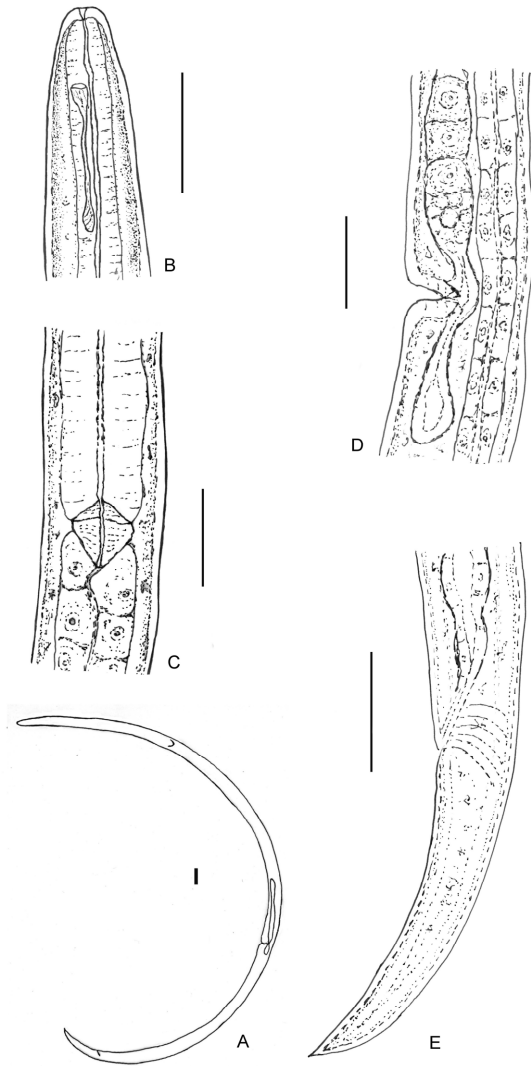


Figure 1. *Amphidelus lagrecai* Vinciguerra & De Francisci, 1973. A: entire body; B: anterior end; C: cardial region; D: vulval region; E: female tail. (Scale bars 20 µm each)

dial duct between fovea and sensilla long. Excretory pore not seen. Oesophagus 283–290 µm long, occupying 20–23 % of entire body length. Glandularium 52–56 µm long, 19–23 % of oesophagus length.

Female. Genital organ prevulval with postvulval sac and spermatheca. Vagina swollen, vulva „open”. Vagina thick-walled. Uterus small, ovary reflexed. Mature egg not observed. Gonad 132–138 µm long, occupying 10–11 % of body

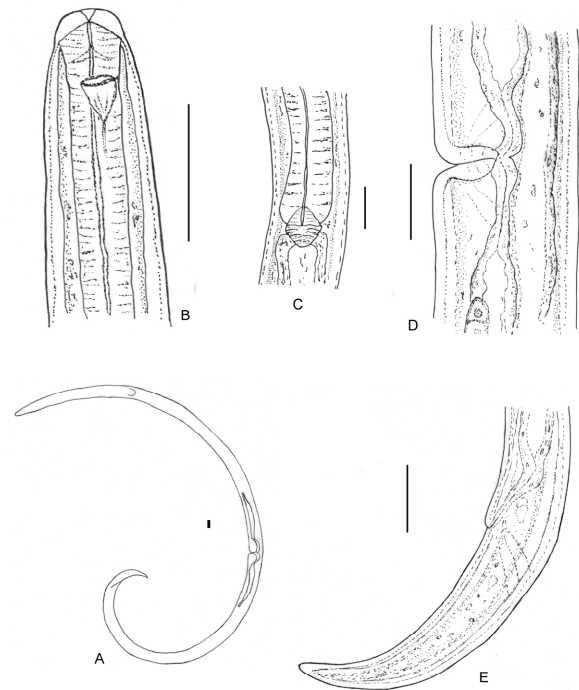


Figure 2. *Amphidelus coluber* Andrassy, 1973. A: entire body; B: anterior end; C: cardial region; D: vulval region; E: female tail. (Scale bars 20 µm each)

length, postvulval sac 23–25 µm. Rectum as long as 0.7–0.8 anal body widths. Tail elongate-conoid, ventrally arcuate with sharp thorn-like mucro.

Habitat and locality. Soil from closed rocky grassland, Sas Hill; collected in April, 2007 by the author.

Amphidelus lagrecai lives in soil and moss and is known from Italy (Alpi Apuane) and Greece (Termopili) (Clausi & Vinciguerra, 1998). It is new to the fauna of Hungary.

***Amphidelus coluber* Andrassy, 1973**

(Fig. 2 A–E)

Females (n = 5): L = 2.2–2.6 mm; a = 40–60; b = 5.5–6.1; c = 24–30; c' = 3–4; V = 50–55 %.

Male: unknown.

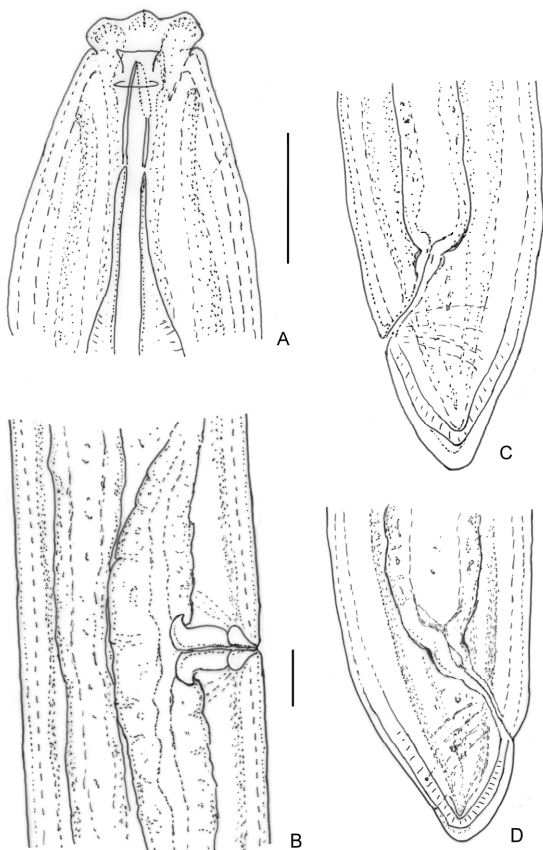


Figure 3. *Aporcelaimellus alius* Andr ssy, 2002. A: anterior end; B: vulval region; C–D: female tail. (Scale bars 20 µm each)

General characters. Body long, very slender and C-shaped after fixation, tapering at the both extremities. Head broadly rounded, 9.5–10 µm wide. Lips hardly discernible. Amphids located 24–26 µm from anterior end. Amphid aperture transverse, 2.5–3 µm wide, slit-like, amphidial duct between fovea and sensilla long. Cuticle 2.5 µm thick, smooth. Stoma hardly discernible, unarmed. Oesophagus short, 356–392 µm, 15–16 % of entire length of body. Excretory pore not or hardly seen, it is 36–37 µm from head. Glandularium 24–26% of entire length of oesophagus.

Female. Genital apparatus amphidelphic. Vulva „open”. Mature eggs not observed. Distance between vulva and anus 11.5 times as long as anal

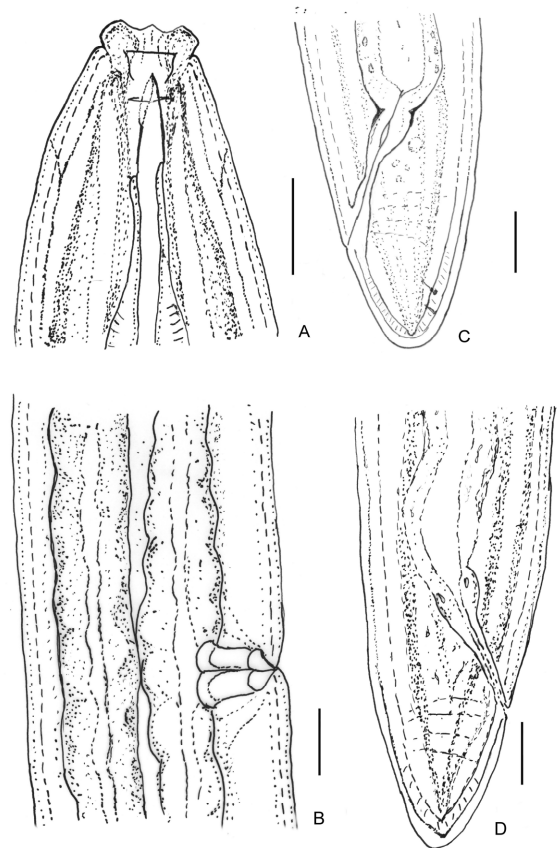


Figure 4. *Aporcelaimellus amylovorus* (Thorne & Swanger, 1936) Heyns, 1965. A: anterior end; B: vulval region; C–D: female tail. (Scale bars 20 µm each)

body widths. Three glands open at the junction rectum–intestine. Tip of tail pointed.

Habitat and locality. Soil from rocky grassland, Sas Hill; collected in April, 2007 by the author.

This species has been recorded from Switzerland, Hungary, Kenya, South Africa and Mexico (Andr ssy, 1977, 1990, 2002a).

Aporcelaimellus alius Andr ssy, 2002

(Fig. 3 A–D)

Females (n = 5): L = 1.80–2.24 mm; a = 20–24; b = 3.2–4.5; c = 40–80; c' = 0.7–1.0; V = 46–49 %.

Male: unknown.

General characters. Body robust. Cuticle 3–4 μm thick on mid-body, and 6–8 μm thick on middle of tail, consisting of two distinct layers of different refraction; inner layer very finely striated. Head 17–18 μm wide. Labial region set off by a deep constriction. Lips hardly separated from one another. Odontostyle strong, 21–23 μm long, aperture a little more than half of stylet length. Amphids cup-shaped, occupying half of corresponding body width or little more. Guiding apparatus aporcelaimoid. Oesophageal cylindrus strongly muscular. Gland nuclei well recognizable: D = 56–58 %, AS1 = 21–25 %, AS2 = 49–50 %, PS1 = 71–73 %, PS2 = 72–75 %. Body at posterior end of oesophagus 4.1–4.5 times as wide as head.

Female. Vulva transverse, inner lips heavily sclerotized, 12–16 μm wide. Genital organ amphidelphic, moderately short, 17–25 % of full body length. Mature eggs 75–80 \times 27–30 μm . Rectum 1.3–1.5, prerectum 1.5–2 anal body diameters long. Tail as long as 0.7–1.0 anal body width. Outer layer of cuticle on tail tip always thicker than inner layer.

Habitat and locality. Soil from closed and opened rocky grasslands, Sas Hill; collected in February, April and October, 2007 by the author.

Andrássy (2002 b) described this species from Fertő–Hanság National Park, Hungary.

***Aporcelaimellus amylovorus* (Thorne & Swanger, 1936) Heyns, 1965**

(Fig. 4 A–D)

Females (n = 12): L = 1.67–2.21 mm; a = 24–26; b = 3.9–4.8; c = 42–52; c' = 1.0–1.1; V = 45–48 %.

Males: unknown.

General characters. Body plump and medium sized, 72–83 μm wide at mid-body, sometimes C-shaped after fixation. Cuticle smooth, 2.5–3.0 μm thick at midbody, 5–6 μm thick on tip of tail, with

finely striated inner layer. Lip region set off by a deep constriction, 15–18 μm wide, lips angular. Odontostyle robust, 18 μm long, relatively short, dorylaimoid, with wide lumen. Aperture occupying half the stylet length. Guiding apparatus aporcelaimoid. Amphids cup-shaped, occupying half of corresponding body width or a little more. Oesophagus 415–438 μm long, occupying 20–25% of body length. Gland nuclei distinct: D = 60–62 %, AS1 = 27–30 %, AS2 = 42–44 %, PS1 = 67–69 %, PS2 = 70–72 %. Glandularium 38–40 % of full length of oesophagus. Body at posterior end of oesophagus 3.8–4.1 times wider than head.

Female. Vulva transverse, lips heavily sclerotized. Vagina 28–35 μm long. Reproductive system amphidelphic. Each genital branch 2.1–2.5 times as long as anal body diameter. Mature eggs not observed. Distance vulva–anus equal to 2.1–2.4 body widths. Rectum as long as anal body diameter. Tail more convex ventrally than dorsally, tail terminus broadly rounded. Rectum nearly equal to anal body diameter.

Habitat and locality. Soil from closed and opened rocky grasslands, Sas Hill; coll. February, April, August and October, 2007 by the author.

Aporcelaimellus amylovorus has hitherto been recorded from Hungary (Fertő–Hanság National Park), India and the United States (Andrássy, 2002b).

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